

Roll No. _____

Total No. of Questions : 06

Total No. of Pages : 01

M.Pharmacy (Pharmaceutics) (Sem-2)
**MOLECULAR PHARMACEUTICS
(NANO TECH AND TARGETED DDS)**

Subject Code : MPH-201

M.Code : 74961

Date of Examination : 05-06-2023

Time : 3 Hrs.

Max. Marks : 75

INSTRUCTIONS TO CANDIDATES :

1. Attempt any FIVE questions out of SIX questions.
2. Each question carry FIFTEEN marks.

1. a) Enumerate the biological process involved in drug targeting to tumor tissues.
b) What is Brain specific delivery
2. **Explain the methods of preparation and evaluation of :**
a) Liposomes
b) Nanoparticles
3. **Give preparation, evaluation and application of :**
a) Niosomes
b) Monoclonal Antibodies
4. Highlight the preparation and evaluation of Pulmonary delivery system
5. **Write short note on :**
a) Gene expression systems
b) Ex vivo gene therapy
c) Cancer
6. Highlight the techniques to prepare and evaluate liposomal gene delivery system.

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1/10/2023



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July-2023

Roll No. []

Total No. of Questions : 06

Total No. of Pages : 01

M.Pharmacy (Pharmaceutics) (Sem.-2)
ADVANCED BIOPHARMACEUTICS & PHARMACOKINETICS

Subject Code : MPH-202

M.Code : 74962

Date of Examination : 30-05-23

Time : 3 Hrs.

Max. Marks: 75

INSTRUCTIONS TO CANDIDATES :

1. Attempt any FIVE questions out of SIX questions.
 2. Each question carries FIFTEEN marks.
-
1. a) Discuss the factors influencing dissolution of drugs from dosage forms. Enumerate the approaches employed for enhancing dissolution of drugs from dosage forms containing lipophilic drugs.
b) Briefly explain the Noyes-Whitney equation and its role in dissolution.
 2. a) What do you mean by biosimilars? Briefly explain biosimilars and their general compendial requirements.
b) Discuss in detail about pharmaceutical factors that influence oral absorption of drugs with examples.
 3. a) Write a note on relation between tight junctions and drug absorption.
b) Discuss in detail about pharmacodynamics of monoclonal antibodies.
 4. a) Differentiate between one and two-compartment open pharmacokinetic models. Discuss the pharmacokinetics of a drug administered by IV infusion following one compartment open model.
b) Explain MM kinetics and its clinical significance. How is K_{max} and V_{max} calculated when MM kinetics is operative.
 5. a) A dose of 300 mg was given to a patient by IV bolus injection. After 30 days the serum drug concentration was, found to be 75 mg/ml. Calculate K and $T_{1/2}$ of the drug assuming first order kinetics.
b) Discuss the IVIVC methods and their requirements.
 6. a) Give an account of P-glycoprotein pump mediated drug efflux and its inhibition with reference to drug absorption from GIT.
b) Discuss pH partition hypothesis with respect to absorption of drugs administered through oral route.

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July-2023

Roll No.

Total No. of Questions : 06

Total No. of Pages : 02

M. Pharmacy (Pharmaceutics) (Sem.-2)
ADVANCED BIOPHARMACEUTICS & PHARMACOKINETICS
Subject Code : MPH-202

M.Code : 74962

Date of Examination : 06-07-22

Time : 3 Hrs.

Max. Marks : 75

INSTRUCTIONS TO CANDIDATES :

1. Attempt any FIVE questions out of SIX questions.
2. Each question carries FIFTEEN marks.

1. A) Discuss different processes of drug absorption from g.i.t. with suitable examples and limitations associate with each of them.
B) What is meant by "dissolution rate limited absorption"? Briefly discuss the pharmaceutical factors that need critical consideration for such drugs.
2. A) Compare drug absorption from tablet with that from solution of drug. What is relative bioavailability?
B) Explain BCS Classification of drugs. Give an account of the approach used for enhancing drug bioavailability.
3. A) Briefly discuss the compendial dissolution testing methods. Explain the importance of "sink condition".
B) Discuss the IVTC methods and their requirements.
4. A) What is bioavailability? Discuss the methods used for assessing bioavailability of drugs.
B) Define "biosimilars" with suitable examples. Give an account of their compendial requirements.
5. Write short notes on :
A) Tight junctions and their importance.
B) Drug interactions.
C) Pharmacokinetic-Pharmacodynamic correlation.

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6. Write briefly about :

- A) Non linear pharmacokinetics and its causes.
- B) Complete cross over design.
- C) Relative and absolute bioavailability.

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Roll No. _____

Total No. of Questions : 06

Total No. of Pages : 02

M.Pharmacy (Pharmaceutics) (Sem.-2)

ADVANCED BIOPHARMACEUTICS & PHARMACOKINETICS

Subject Code : MPH-202

M.Code : 74962

Date of Examination : 06-07-22

Time : 3 Hrs.

Max. Marks : 75

INSTRUCTIONS TO CANDIDATES :

1. Attempt any FIVE questions out of SIX questions.
2. Each question carries FIFTEEN marks.

1. A) Discuss different processes of drug absorption from g.i.t. with suitable examples and limitations associate with each of them.

B) What is meant by "dissolution rate limited absorption"? Briefly discuss the pharmaceutical factors that need critical consideration for such drugs.

2. A) Compare drug absorption from tablet with that from solution of drug. What is relative bioavailability?

B) Explain BCS Classification of drugs. Give an account of the approach used for enhancing drug bioavailability.

3. A) Briefly discuss the compendial dissolution testing methods. Explain the importance of "sink condition".

B) Discuss the IVIVC methods and their requirements.

4. A) What is bioavailability? Discuss the methods used for assessing bioavailability of drugs.

B) Define "biosimilars" with suitable examples. Give an account of their compendial requirements.

5. Write short notes on :

A) Tight junctions and their importance.

B) Drug interactions

C) Pharmacokinetic-Pharmacodynamic correlation.

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6. Write briefly about :

A) Non linear pharmacokinetics and its causes.

B) Complete cross over design.

C) Relative and absolute bioavailability.

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Roll No.

Total No. of Questions : 06

Total No. of Pages : 01

M.Pharmacy (Pharmaceutics) (Sem.-2)

COSMETIC & COSMECEUTICALS

Subject Code : MPH-204

M.Code : 74964

Date of Examination : 12-07-22

Time : 3 Hrs.

Max. Marks: 75

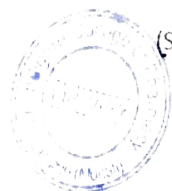
INSTRUCTIONS TO CANDIDATES :

1. Attempt any FIVE questions out of SIX questions.
2. Each question carries FIFTEEN marks.

1. A) Define a cosmetic product and give an account of the label requirements according to Indian regulations for cosmetics.
B) Give an account of the penalties levied for manufacture and sale of spurious and misbranded cosmetics in India.
2. A) Enumerate nail care cosmetic products. Give an overview of the standards to be maintained for these products.
B) Explain the structure of skin and comment on the formulation and action of anti-acne cosmetic products.
3. A) Write a note on emollients used in cosmetics giving suitable examples.
B) Discuss the formulation of a shampoo and justify the inclusion of various additives in this formulation.
4. A) Discuss the key differences in the ingredients used for cold cream and vanishing cream.
B) Comment on the causes of bleeding gums and oral cavities. Discuss the cosmeceuticals used for preventing them.
5. What are herbal skin care and hair care agents? Give suitable examples and explain the challenges encountered in formulating herbal cosmeceuticals.
6. Write notes on (any three) :
A) Herbal emollients
B) Soaps
C) Formulations for preventing mouth odour.
D) Sun screen agents

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(S31)-1004

June 2022

Roll No.

Total No. of Questions : 06

Total No. of Pages : 01

M.Pharmacy (Pharmaceutics) (Sem.-2)

COSMETIC & COSMECEUTICALS

Subject Code : MPH-204

M.Code : 74964

Date of Examination : 12-07-22

Time : 3 Hrs.

Max. Marks: 75

INSTRUCTIONS TO CANDIDATES :

1. Attempt any FIVE questions out of SIX questions.
2. Each question carries FIFTEEN marks.

1. A) Define a cosmetic product and give an account of the label requirements according to Indian regulations for cosmetics.
B) Give an account of the penalties levied for manufacture and sale of spurious and misbranded cosmetics in India.
2. A) Enumerate nail care cosmetic products. Give an overview of the standards to be maintained for these products.
B) Explain the structure of skin and comment on the formulation and action of anti-acne cosmetic products.
3. A) Write a note on emollients used in cosmetics giving suitable examples.
B) Discuss the formulation of a shampoo and justify the inclusion of various additives in this formulation.
4. A) Discuss the key differences in the ingredients used for cold cream and vanishing cream.
B) Comment on the causes of bleeding gums and oral cavities. Discuss the cosmeceuticals used for preventing them.
5. What are herbal skin care and hair care agents? Give suitable examples and explain the challenges encountered in formulating herbal cosmeceuticals.
6. Write notes on (any three) :
 - A) Herbal emollients
 - B) Soaps
 - C) Formulations for preventing mouth odour.
 - D) Sun screen agents

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.

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(S31) 1004

June - 2022

Roll No. _____
Total No. of Questions : 06

Total No. of Pages : 01

M.Pharmacy. (Pharmacology/Pharmaceutical Analysis) (Sem.-2)

CLINICAL RESEARCH & PHARMACOVIGILANCE

Subject Code : MPL-204T

M.Code : 74946

Date of Examination : 12-07-22

Time : 3 Hrs.

Max. Marks: 75

INSTRUCTIONS TO CANDIDATES :

1. Attempt any FIVE questions out of SIX questions.
2. Each question carries FIFTEEN marks.

1. A) What is meant by informed consent? Discuss the ethical issues concerning informed consent for clinical trials.
B) Give an account of the storage provisions to be provided in a pharmaceutical plant for raw materials and finished products.
2. A) Enumerate the different types of personnel required for a clinical trial. Mention their responsibilities in brief.
B) Enumerate the different study designs for clinical trials. Describe any one.
3. A) Discuss the protocol for conducting a clinical trial. How is clinical study report documented?
B) Differentiate between side effect and adverse drug reaction. How is severity and seriousness of ADRs assessed and recorded?
4. What are pharmacovigilance studies? Enumerate the approaches used for these studies. Give a detailed account of WHO regulations for this purpose.
5. Discuss the regulatory guidelines for ADRs reporting in India. Outline the procedure used for this purpose.
6. Write notes on (any three) :
A) Vaccine safety surveillance
B) Pharmacoepidemiology
C) Statistical methods for evaluating medication safety data.
D) Non RCT and its significance.

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Total No. of Questions : 06

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M.Pharmacy (Pharmaceutics) (Sem.-2)
MOLECULAR PHARMACEUTICS
(NANO TECH AND TARGETED DDS)

Subject Code : MPH-201

M.Code : 74961

Date of Examination : 04-07-22

Time : 3 Hrs.

Max. Marks : 75

INSTRUCTIONS TO CANDIDATES :

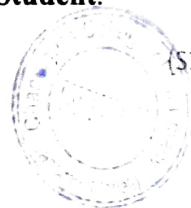
1. Attempt any FIVE questions out of SIX questions.
2. Each question carry FIFTEEN marks.

1. a) Discuss the properties of a good polymer conjugate.
b) Discuss the different strategies for enhanced CNS drug delivery.
2. a) What are the obstacles in gene delivery?
b) Differentiate between dual targeting and combination targeting.
3. a) Explain the mechanism of liposome formation.
b) Explain rigidization of fluid phase vesicles with cholesterol.
4. a) Discuss the physicochemical aspects of non-ionic surfactant vesicles.
b) Explain reverse phase evaporation.
5. a) Discuss components of an aerosols.
b) Explain any one method of production of aerosols.
6. a) How characterization of nanoparticles can be carried out?
b) Discuss the different polymers used for gene delivery.

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June 2022

Roll No.

Total No. of Questions : 06

Total No. of Pages : 01

M.Pharmacy (Pharmaceutics) (Sem.-2)

COMPUTER AIDED DRUG DELIVERY SYSTEM

Subject Code : MPH-203

M.Code : 74963

Date of Examination : 08-07-22

Time : 3 Hrs.

Max. Marks: 75

INSTRUCTIONS TO CANDIDATES :

1. Attempt any FIVE questions out of SIX questions.
2. Each question carries FIFTEEN marks.

1. a. Summarize the history of computers in pharmaceutical research and development. (8)
b. Explain regulatory and industrial view on QbD. (7)
2. a. Explain BCRP and OCT Transporters. (8)
b. Give the modeling techniques for drug absorption and solubility. (7)
3. a. What is optimization? Explain optimal design with atleast one example. (8)
b. Explain the use of optimization designs in the preparation of microemulsion. (7)
4. Write short note on :
a. In vitro dissolution kinetic models. (5)
b. Fed vs Fasted state (5)
c. Virtual trial (5)
5. Write short note on :
a. Artificial Intelligence (8)
b. Robotics (7)
6. a. Highlight the computer simulations in isolated tissues. (8)
b. Explain the application of IVIVC in availing biowaivers from pharmacokinetics. (7)

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June 2022

Roll No.

Total No. of Questions : 06

Total No. of Pages : 01

M. Pharmacy (Pharmaceutics) (Sem.-2)
COSMETIC & COSMECEUTICALS

Subject Code : MPH-204

M. Code : 74964

Date of Examination : 12-07-22

Time : 3 Hrs.

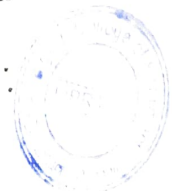
Max. Marks: 75

INSTRUCTIONS TO CANDIDATES :

1. Attempt any FIVE questions out of SIX questions.
 2. Each question carries FIFTEEN marks.
-
1. A) Define a cosmetic product and give an account of the label requirements according to Indian regulations for cosmetics.
B) Give an account of the penalties levied for manufacture and sale of spurious and misbranded cosmetics in India.
 2. A) Enumerate nail care cosmetic products. Give an overview of the standards to be maintained for these products.
B) Explain the structure of skin and comment on the formulation and action of anti-acne cosmetic products.
 3. A) Write a note on emollients used in cosmetics giving suitable examples.
B) Discuss the formulation of a shampoo and justify the inclusion of various additives in this formulation.
 4. A) Discuss the key differences in the ingredients used for cold cream and vanishing cream.
B) Comment on the causes of bleeding gums and oral cavities. Discuss the cosmeceuticals used for preventing them.
 5. What are herbal skin care and hair care agents? Give suitable examples and explain the challenges encountered in formulating herbal cosmeceuticals.
 6. Write notes on (any three) :
 - A) Herbal emollients
 - B) Soaps
 - C) Formulations for preventing mouth odour.
 - D) Sun screen agents

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(S31)-1004

June-2022

Roll No.

Total No. of Questions : 06

Total No. of Pages : 01

M. Pharmacy (Pharmaceutics) (Sem -2)

COSMETIC & COSMECEUTICALS

Subject Code : MPH-204

M. Code : 74964

Date of Examination : 12-07-22

Time : 3 Hrs.

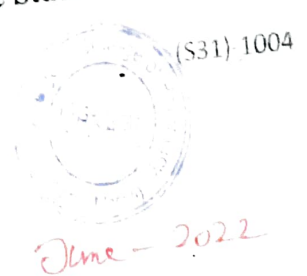
Max. Marks : 75

INSTRUCTIONS TO CANDIDATES :

1. Attempt any FIVE questions out of SIX questions.
 2. Each question carries FIFTEEN marks.
1. A) Define a cosmetic product and give an account of the label requirements according to Indian regulations for cosmetics.
B) Give an account of the penalties levied for manufacture and sale of spurious and misbranded cosmetics in India.
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B) Comment on the causes of bleeding gums and oral cavities. Discuss the cosmeceuticals used for preventing them.
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 - A) Herbal emollients
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Roll No.

Total No. of Questions : 06

Total No. of Pages : 01

M. Pharmacy (Pharmaceutics) (Sem.-2)
MOLECULAR PHARMACEUTICS
(NANO TECH AND TARGETED DDS)

Subject Code : MPH-201

M. Code : 74961

Date of Examination : 04-07-22

Time : 3 Hrs.

Max. Marks : 75

INSTRUCTIONS TO CANDIDATES :

1. Attempt any FIVE questions out of SIX questions.
2. Each question carry FIFTEEN marks.

1. a) Discuss the properties of a good polymer conjugate.
b) Discuss the different strategies for enhanced CNS drug delivery.
2. a) What are the obstacles in gene delivery?
b) Differentiate between dual targeting and combination targeting.
3. a) Explain the mechanism of liposome formation.
b) Explain rigidization of fluid phase vesicles with cholesterol.
4. a) Discuss the physicochemical aspects of non-ionic surfactant vesicles.
b) Explain reverse phase evaporation.
5. a) Discuss components of an aerosols.
b) Explain any one method of production of aerosols.
6. a) How characterization of nanoparticles can be carried out?
b) Discuss the different polymers used for gene delivery.

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Roll No. _____

Total No. of Questions : 06

Total No. of Pages : 01

M. Pharmacy (Pharmaceutics) (Sem.-2)
COMPUTER AIDED DRUG DELIVERY SYSTEM

Subject Code : MPH-203
M. Code : 74963

Time : 3 Hrs. Date of Examination : 08-07-22

Max. Marks: 75

INSTRUCTIONS TO CANDIDATES :

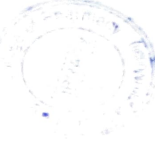
1. Attempt any FIVE questions out of SIX questions.
2. Each question carries FIFTEEN marks.

1. a. Summarize the history of computers in pharmaceutical research and development. (8)
- b. Explain regulatory and industrial view on QbD. (7)
2. a. Explain BCRP and OCT Transporters. (8)
- b. Give the modeling techniques for drug absorption and solubility. (7)
3. a. What is optimization? Explain optimal design with atleast one example. (8)
- b. Explain the use of optimization designs in the preparation of microemulsion. (7)
4. Write short note on :
 - a. In vitro dissolution kinetic models. (5)
 - b. Fed vs Fasted state (5)
 - c. Virtual trial (5)
5. Write short note on :
 - a. Artificial Intelligence (8)
 - b. Robotics (7)
6. a. Highlight the computer simulations in isolated tissues. (8)
- b. Explain the application of IVIVC in availing biowaivers from pharmacokinetics. (7)

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MPH-74963

(531)-680



Roll No. _____

Total No. of Questions : 06

Total No. of Pages : 01

M.Pharmacy (Pharmaceutics) (2017 Batch) (Sem.-2)

COMPUTER AIDED DRUG DELIVERY SYSTEM

Subject Code : MPH-203

M.Code : 74963

Time : 3 Hrs.

Max. Marks : 75

INSTRUCTIONS TO CANDIDATES :

1. Attempt any FIVE questions out of SIX questions.
2. Each question carries FIFTEEN marks.

1. a) Write the benefits of pharmaceutical automation in packaging. 5
b) Explain the computational modelling concept with respect to drug absorption and solubility. 5
c) Differentiate Descriptive and Mechanistic modelling. 5
2. a) Write about efflux transporters with suitable examples. 7
b) Describe the applications of computational fluid dynamics in pharmacy. 8
3. Outline the quality by design concept in pharmaceutical product development with respect to International conference on harmonization guidelines. 15
4. a) Discuss the role of computers in pharmaceutical emulsions development. 7
b) "Why and how the innovative use of computer in R & D can be legal protected". Comment. 8
5. Give an overview of artificial intelligence and its application in pharmaceuticals. Comment on challenges and its future perspective. 15
6. Enumerate the history of computers in pharmaceutical research & development. 15

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May-2019



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Roll No. of Questions : 06

Total No. of Pages : 01

M.Pharmacy (Pharmaceutics) (2017 Batch) (Sem.-2)

ADVANCED BIOPHARMACEUTICS & PHARMACOKINETICS

Subject Code : MPH-202T

M.Code : 74962

Time : 3 Hrs.

Max. Marks : 75

INSTRUCTIONS TO CANDIDATES :

Attempt any FIVE questions out of SIX questions.

1. Each question carries FIFTEEN marks.
2. Discuss the various factors affecting drug absorption in vivo. Also elaborate upon the various active-mechanisms for drug absorption. (15)
3. Distinguish between tablets and capsules as a dosage form. Discuss the major factors associated for the drug release from each dosage form. (15)
4. Discuss the compendia method of classification of dissolution with respect to USP. (15)
5. a) Enumerate one compartment model with respect to LV infusion. (10)
b) Discuss with example cytochrome P450 based drug interaction. (5)
6. a) Write a note on biosimilar drug products. (5)
b) What do you understand by bioequivalence studies? (10)
7. Write a note on following :
 - a) Monoclonal antibodies (5)
 - b) Vaccines (5)
 - c) Any commercialized drug products from biotechnology source. (5)

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.

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May - 2019

Roll No.

Total No. of Questions : 06

Total No. of Pages : 01

M.Pharmacy (Pharmaceutics) (2017 Batch) (Sem.-2)

**MOLECULAR PHARMACEUTICS
(NANO TECH AND TARGETED DDS)**

Subject Code : MPH-201

M.Code : 74961

Time : 3 Hrs.

Max. Marks : 75

INSTRUCTIONS TO CANDIDATES :

1. Attempt any FIVE questions out of SIX questions.
2. Each question carry FIFTEEN marks.

- Q1. (a) What are Aptamers? Give their applications. 3
(b) What is EPR? 3
(c) Enumerate six diseases treated by gene therapy. 3
(d) Explain methods used for filling of aerosols. 3
(e) Define Aquasomes. 3
- Q2. (a) Discuss various viral carrier systems used in gene delivery. 10
(b) Define somatic gene therapy. Discuss different types of somatic gene therapy. 5
- Q3. (a) Discuss methods facilitating nasal absorption. 7
(b) Explain quality control tests of aerosol formulations. 8
- Q4. (a) Discuss various polymers used in the preparation of nanoparticles. 10
(b) Discuss the sterility aspects of liposomes. 5
- Q5. (a) Explain the importance of cellular and lymphatic uptake in targeted drug delivery systems. 10
(b) Discuss the factors affecting drug transport across blood brain barrier. 5
- Q6. (a) What are microspheres? Explain in detail methods of preparation and applications in drug delivery systems. 10
(b) Discuss various components and their role in formation of niosomes. 5

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1 | M-74961



May-2019

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Roll No.

Total No. of Pages : 01

Total No. of Questions : 06

M. Pharmacy (Pharmaceutics) (2017 Batch) (Sem. - 2)
COSMETIC & COSMECEUTICS

M Code: 74964

Subject Code: MPH-204

Paper ID: [74964]

Time : 3 Hrs.

Max. Marks : 75

INSTRUCTIONS TO CANDIDATES:

1. Attempt any FIVE questions out of total SIX.
2. Each question carries FIFTEEN marks.

1. a) Define Cosmetics. (2)
 - b) Differentiate between misbranded and spurious cosmetics. (4)
 - c) Discuss the regulatory requirements regarding import of cosmetics in India. (9)
2. a) Draw a neat labelled diagram of Skin depicting route of penetration also. (5)
 - b) Discuss the structural changes take place in skin after wrinkles. (5)
 - c) Discuss the care of face. (5)
3. Discuss the role of surfactants in cosmaceuticals. (15)
4. a) Discuss the formulation components of shampoo. (7)
 - b) Discuss SPF? Classify sunscreens with examples. (8)
5. Discuss COSMOS guidelines with respect to manufacturing of cosmetics. (15)
 6. Discuss the challenges while formulating cosmetics. (15)

APRIL
2018

